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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,203	02/05/2001	Timothy M. Schmidl	TI-31284	3036
23494	7590	12/29/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			GHULAMALI, QUTBUDDIN	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/777,203	SCHMIDL ET AL.	
	Examiner	Art Unit	
	Qutub Ghulamali	2637	

GA

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Remarks/Amendment filed on 10/13/2005.
2. Applicant's remarks, see pages 9-12, filed 10/13/2005, with respect to the rejection(s) of claim(s) 1, 8, 10, 16, 23 and 27 under 35 USC 102 (b) and 35 USC 103 (a) have been fully considered. However, applicant's amendment of claims 8, 10, 13, 16 and 27, does not place the application in condition for allowance. The rejection follows:

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7, 23-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogard (US Patent 4,718,066) in view of Palm (US Patent 6,694,470) and further in view of Ghirnikar et al (USP 6,381,241).

Regarding claims 1, 2, 23, 24, 26 and 27, Rogard discloses a data communications system and a method for transmission of signals from a transmitter to a receiver, the transmitter comprising:

the transmitter end applying to a plurality of original data bits that are to be transmitted to the receiving end an encoding algorithm that produces overhead bits (encoding means for encoding a

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message in sets of data blocks (plurality of data bits), each block including additional check symbols enabling detection and correction within the block including redundant data blocks (produce overhead bits) (col. 3, lines 20-35). Rogard however, does not explicitly show transmitting end refraining from transmitting the overhead bits until the transmitting end receives an indication of error in reception from the receiving end.

Palm in a similar field of endeavor discloses,

transmitting end refraining from transmitting the overhead bits until the transmitting end receives an indication from the receiving end that the original data have not been correctly received at the receiving end (col. 3, lines 23-51, 48-67; col. 15, lines 26-32). It would have been obvious to a person of ordinary skill in the art the time the invention was made to provide a similar arrangement as taught by Palm in the system of Rogard because it can minimize retransmission of signals and conserve transmission power and time. The combined art of Rogard and Palm however, does not explicitly show the transmitting end transmitting the original data bits without the overhead bits in a first transmission to the receiving end. Ghirnkar in a similar field of endeavor discloses a method and an apparatus in a wireless communication transmitter transmitting the original data bits without the overhead bits in a first transmission to the receiving end and retransmitting the original data bits (fig. 6, elements 605-640; col. 9, lines 41-65). It would have been obvious to a person of ordinary skill in the art the time the invention was made to provide transmission of original data bits without the overhead bits as taught by Ghirnkar in the combined art of Rogard and Palm because by transmitting original data (payload) without overhead in a first transmission the fragmentation of signal can be detected

early on in the communication process minimizing transmission power and enhance the handshake between the transmitter and receiver.

Regarding claims 3, 4, 7, 29, 31 and 32, Rogard and Palm combined discloses all limitations of the claim. Rogard-Palm combination however, is not explicit regarding receiving end combining a received version of the original data bits and a received version of the overhead bits to produce a combined set of received bits and the receiving end applying to the combined set of received bits a decoding algorithm that corresponds to said encoding. Ghirnkar in a similar field of endeavor discloses receiving end combining a received version of the original data bits and a received version of the overhead bits to produce a combined set of received bits and applying it to a FEC decoding algorithm that corresponds to said encoding process (col. 9, lines 28-40, 55-67; col. 11, lines 20-25). It would have been obvious to one of ordinary skill in the art the time the invention was made to combine received original data bits and overhead bits to produce a combined set of received bits and apply it to a decoding process as taught by Ghirnkar in the combined art of Rogard and Palm because by combining and decoding together the received bits, reproduction of the original data bits can be adequately achieved.

As per claims 6, 26 and 30 Rogard and Palm combined discloses all limitation of the claim. Rogard and Palm combination however, is not explicit about the receiving end applying an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data. Ghirnkar in a similar field of endeavor discloses receiving end applying an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original

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data (col. 19, lines 28-67; col. 13, lines 30-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the receiving end apply an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data as taught by Ghirnikar in the combined art of Rogard and Palm because detection of errors early on in the process can mitigate the transmission and retransmission of message queuing and maximize channel usage.

Regarding claims 5 and 25 Rogard, Palm, Ghirnikar disclose all limitations of the claim. The combination however, is not explicit regarding Viterbi encoding and decoding algorithms. As best understood by the examiner, the Viterbi encoding and decoding is conventionally known and expected in the art of signal communication. Therefore, it would have been obvious to a person of ordinary skill in this art to include Viterbi encoding and decoding algorithms to provide efficient and reliable data reception and transmission in the combined arts.

As per claim 28, Rogard, Palm, Ghirnikar combination discloses every feature of the claimed invention except a convolutional encoding algorithm. Official Notice is taken that both the concept and the advantages of using convolutional encoding algorithm are conventionally well known and expected in the art. Therefore it would have been obvious to a person of ordinary skill in this art to include convolution encoding algorithm because it can provide reliable encoding of signals in the combined art of Rogard, Palm and Ghirnikar.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 8, 9, 10, 11, 13-15 and 16-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Ghirnikar (USP 6,381,241).

Regarding claim 8, Ghirnikar discloses a method and an apparatus for communicating data from a transmitting end to a receiving end comprising:
the receiving end receiving from the transmitting end a first transmission including original data bits without overhead bits produced at the transmission end by operation of an encoding algorithm applied to the original data bits (col. 5, lines 13-20);
the receiving end determining whether the original data bits have been received correctly and responsive to a determination that the original data bits have not been received correctly, the receiving end transmitting to the transmitting end a request for transmission of the overhead bits (abstract; col. 5, lines 13-42).

As per claim 9, Ghirnikar discloses every feature of the claimed invention except a convolutional encoding algorithm. Official Notice is taken that both the concept and the advantages of using convolutional encoding algorithm are conventionally well known and expected in the art. Therefore it would have been obvious to a person of ordinary skill in this art

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to include convolution encoding algorithm because it can provide reliable encoding of signals in the art of Ghirnikar

Regarding claim 10, Ghirnikar discloses a data communication apparatus comprising:
an input for receiving original data bits that is to be transmitted via a communication channel to another data communication apparatus (abstract; col. 5, lines 14-21, 23-42);
an encoder coupled to said input for applying to the original data bits an encoding algorithm that produces overhead bits (col. 6, lines 27-36);
an output for providing bits that are to be transmitted across the communication channel (abstract; col. 5, lines 35-42); and
a data path coupled between said encoder and said output, said data path receiving information from another data communication apparatus, said data path selecting one of the original data bits and the overhead bits in response to a first information, said data path selecting the other of the original data bits and the overhead bits in response to a second information to be provided to said output for transmission across the communication channel to another data communication apparatus (col. 5, lines 14-42; col. 6, lines 53-65; col. 9, lines 35-67).

Regarding claim 11, Ghirnikar discloses register (memory) to correctly receive and store corrected data block (col. 3, lines 57-66).

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghirnikar (USP 6,381,241) in view of Jalali et al (US Patent 6,694,469).

Regarding claim 13, Ghirnikar discloses
first information includes an acknowledgement and said-second information includes a negative acknowledgement indicating that an earlier transmission has not been received correctly at said

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another communication apparatus, said data path responsive to the negative acknowledgement for changing its selection from one of the original data bits and the overhead bits to the other of original data bits and the overhead bits (col. 5, lines 15-43).

Regarding claim 14 Ghirnikar discloses a wireless communication apparatus (abstract; col. 4, lines 18-32, 55-62).

As per claim 15, Ghirnikar discloses every feature of the claimed invention except a convolutional encoding algorithm. Official Notice is taken that both the concept and the advantages of using convolutional encoding algorithm are conventionally well known and expected in the art. Therefore it would have been obvious to a person of ordinary skill in this art to include convolution encoding algorithm, because it can provide reliable encoding of signals in Ghirnikar.

Regarding claim 16, Ghirnikar discloses a data communication apparatus comprising: an input for receiving a received version of original data bits in response to a first information without overhead bits produced at another data communication apparatus by operation of an encoding algorithm applied to original bits, input receiving overhead bits in response to a second information, said original bits and overhead bits transmitted over a communication channel by said another data communication apparatus (abstract; col. 5, lines 14-21, 23-42); an error detector coupled to said input for determining whether the received version of the original data is correct (col. 6, lines 16-50); and a controller coupled (processor) to said error detector responsive to a determination that the received version of the original data bits is correct for providing first information to another data communication apparatus and responsive to a determination that the received version of the

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original data is incorrect for providing second information to another data communication apparatus (col. 5, lines 15-42).

Regarding claim 17, Ghirnikar discloses a received version of the overhead bits as transmitted from said another data communication apparatus said controller coupled to said input for applying to the received version of the overhead bits a mapping operation which if the overhead bits have been received correctly at the receiving end will result in the original data bits, said error detector coupled to said controller for applying an error detection procedure to the result of the mapping operation to determine whether the mapping operation has resulted in the original data bits (col. 9, lines 28-40, 55-67; col. 11, lines 20-25).

As per claims 18 and 20, Ghirnikar discloses the apparatus including a decoder coupled to said input and said controller said controller responsive to a determination by said error detector that the mapping operation has not resulted in the original data bits for signaling said decoder to apply to the received version of the original data bits and the received version of the overhead bits a decoding algorithm that corresponds to said encoding: algorithm (col. 6, lines 53-67; col. 7, lines 1-12).

Regarding claim 19, Ghirnikar discloses register (memory) to correctly receive and store corrected data block (col. 3, lines 57-66).

Regarding claim 21, Ghirnikar disclose all limitations of the claim except Viterbi encoding and decoding algorithms. As best understood by the examiner, the Viterbi encoding and decoding is conventionally known and expected in the art of signal communication. Therefore, it would have been obvious to a person of ordinary skill in this art to include Viterbi

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encoding and decoding algorithms to provide efficient and reliable data reception and transmission in the art of Ghirnikar.

8. Regarding claim 12, Ghirnikar discloses all claimed limitation except a selector coupled between buffer and output. Jalali in a similar field of endeavor discloses data path include a selector coupled between buffer and output for obtaining one of the original data bits and the overhead bits from buffer to be provided to output for transmission (col. 4, lines 13-16, 27-33). It would have been obvious to a person of ordinary skill in this art at the time the invention was made to include a selector for selecting the original and overhead bits as taught by Jalali in the system of Rogard because it can provide the desired bits to the output for maximized transmission of signals.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG
December 27, 2005.



JAY K. PATEL
SUPERVISORY PATENT EXAMINER